



DEMOGRAPHIC RESEARCH

A peer-reviewed, open-access journal of population sciences

DEMOGRAPHIC RESEARCH

VOLUME 28, ARTICLE 46, PAGES 1373-1388

PUBLISHED 27 JUNE 2013

<http://www.demographic-research.org/Volumes/Vol28/46/>

DOI: 10.4054/DemRes.2013.28.46

Reflection

Thinking about post-transitional demographic regimes: A reflection

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Thinking about post-transitional demographic regimes: A reflection

Chris Wilson¹

Abstract

BACKGROUND

For the last 70 years the concept of the demographic transition has provided a basis for understanding and predicting population trends in the developing world. However, a majority of the developing world's population will soon be post-transitional – what will happen then? This paper attempts to outline where answers to this question might be found. It suggests that a valuable way to organise the study of these issues is the concept of the demographic regime.

OBJECTIVE

The aim of the paper is to encourage discussion on the nature of post-transitional demographic regimes around the world, especially in the developing world. The style of the reflection is that of a speculative essay – a *Denkstück* or *ballon d'essai*.

SCOPE

In addition to a discussion of the concept of a demographic regime, the paper looks at three possible sources of information on the determinants of post-transitional regimes in the developing world: 1) the nature of the transition itself, 2) lessons drawn from pre-transitional regimes, and 3) demographic trends in Europe and other developed countries, some which have been post-transitional for several decades.

CONCLUSIONS

The paper concludes with a set of suggestions for future research on the topic.

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1. Introduction – the end of history?

Demography, according to the cynic, is long on quantification and short on ideas. There is more than a grain of truth in this assertion, but a general lack of theoretical depth in demographic research should not obscure the fact that the discipline has generated several valuable conceptual frameworks; two of the most powerful are the demographic transition and the demographic regime. The former has dominated demographic thinking for many decades, while the latter has mostly been applied to pre-transitional populations. However, as the transition draws to a close, the concept of the regime may provide a helpful way to organise our thinking on post-transitional demography.

For almost 70 years since its promotion by Frank Notestein and others, the idea of the demographic transition has been central to our understanding of global population dynamics (Notestein 1945; Davis 1945). Indeed, Demeny (1972: 153) has called the search for an understanding of the transition “the central preoccupation of modern demography”. Whatever arguments may rage over the ultimate causes of the transition, the empirical regularities in trends in mortality and fertility have been striking, providing a highly plausible basis for forecasting future levels in many parts of the world. After many decades of relevance, however, the utility of the demographic transition model for anticipating the future is rapidly diminishing. Fertility is now close to or below the replacement level for most of the world’s population; the United Nations (2011) estimates that in 2005-2010, leaving aside Sub-Saharan Africa (where fertility is still generally high) the total fertility rate (TFR) in the developing world was 2.3 and falling. For comparison the TFR in more developed nations was 1.6. Moreover, life expectancy in the developing world outside Africa (68) was approaching levels not seen in much of the developed world until the 1970s.

What constitutes the end of the transition cannot unambiguously be defined, but one possible candidate is the date at which fertility in a population first falls to or below the replacement level. In these terms, the majority of the world will soon have entered a phase of demographic development that can validly be termed “post-transitional”. In this context, demographers need to begin a more serious attempt to understand the determinants of population dynamics once the transition has run its course. Unfortunately, few of the many versions of demographic transition theory have a great deal to say about what comes next; many have assumed that fertility will tend to the replacement level. In particular, the United Nations uses a very strong version of this assumption of convergence for its widely-used projections, anticipating a homogeneous world in which almost all demographic variety has disappeared. The UN’s view of the future brings to mind Francis Fukuyama’s vision of the “End of History”, in which the advent of Western liberal democracy signals the end point of humanity’s sociocultural evolution and the final form of human government (Fukuyama 1993). The shakiness of

both the empirical and theoretical basis for such an implicitly homeostatic assumption have led Demeny (1997: 94) to refer to replacement level fertility as “the implausible endpoint of the demographic transition”. It seems fair to conclude that the assumption of long-term convergence to replacement-level fertility has little or no basis in either empirical evidence or in demonstrably relevant theory.

If we have no sound theory to guide our expectations concerning post-transitional trends in the developing world, where else can we seek guidance? There are three possible sources of empirical evidence that may be useful: the nature of the transition itself, evidence from pre-transitional populations, and finally demographic trends in developed countries, many of which have been post-transitional for several decades. The suggestion that we seek enlightenment in examining the transition and post-transitional trends in Europe and other developed regions will probably not cause any surprise. However, looking further back – to the regimes of the pre-transitional era – for insights into possible future developments is a less familiar strategy. The conventional view of demographic transition theory, and of the associated modernization theory, is that the processes of modernization sweep away all traces of earlier diversity. Already we are seeing striking evidence that contradicts this viewpoint with regard to trends in the sex ratio at birth in a band of countries running from the Balkans, through the Middle East and on to India and China (Guilmoto 2009). In these countries the availability of sex-selective abortion has enabled a long-standing and strong preference for sons over daughters to re-emerge. Nothing within transition theory predicted such a development, but it is an example of the way in which socio-cultural features of pre-transitional societies can survive the many changes wrought by modernization and the transition, and re-appear in a post-transitional context. The impact of initial conditions may be hidden during the transition only to re-emerge later and throw an ancient spanner into the workings of modern society.

There are clearly great differences between the pre- and post-transitional worlds. However, there may be more similarities than is often appreciated. The demographic transition is, above all else, an era of population growth, and the dynamic era of the transition differs fundamentally from the post-transitional world of low or negative growth. In contrast, we may gain more insights from examining pre-transitional population dynamics that were also characterised by low rates of growth. In this paper I will consider the main lessons we can draw from pre-transitional population trends. My aim is not to provide a comprehensive summary or literature review, but rather to point out a few key elements which may be valuable as pointers to future research.

I begin by considering the nature of the demographic transition in a global and long-term perspective. I then go on to discuss the concept of demographic regimes and what we can learn from the ways in which they operated before the transition, including the role of homeostatic forces. I then offer a number of suggestions on the nature and

institutional context of post-transitional regimes. To conclude I propose a number of points that may help shape a research agenda for further study of post-transitional demographic regimes.

2. Demographic transition in a long-term perspective

Lytton Strachey (1918: vii) remarked on the difficulty in coming to an objective assessment of a familiar topic: “The history of the Victorian age will never be written: we know too much about it. For ignorance is the first requisite of the historian – ignorance, which simplifies and clarifies, which selects and omits”. Something similar could be said of the demographic transition, a process that has been minutely quantified and studied. However, as we approach its end, it is perhaps time to attempt a simple summary of the transition. One difficulty in providing an overview of the transition lies in striking the right balance between generality and specificity; how far is it a single global process and how far the result of distinct, path-dependent processes in each country or region? There is good reason to view the transition as a single, global process; for a discussion of the key issues, see Reher (2004, 2007) and Lee and Reher (2011). Dyson (2010), arguing for the centrality of mortality decline as the driving force of transition, has shown that trends in life expectancy and the total fertility rate during the transition are closely related. Impressed with the similarity of trends around the developing world, Wilson (2011) argues that this closeness indicates the existence of a “main sequence” of transition since 1950.

Figure 1 provides some evidence to support the view that progress in mortality is tightly linked to fertility transition, plotting the combinations of life expectancy and total fertility seen since 1950-55 in the various world regions as defined by the United Nations. To the lower right, the developed world tracks through what we can think of as post-transitional space, while to the upper left Sub-Saharan Africa has moved only into the early stages of transition. However, the other world regions show surprisingly similar trends once time is removed, as in this graph. The line for Latin America, for example, is all but indistinguishable from that for North Africa and West Asia.

Figure 1: Paths of total fertility versus life expectancy (both sexes), world regions, 1950-55 to 2005-10

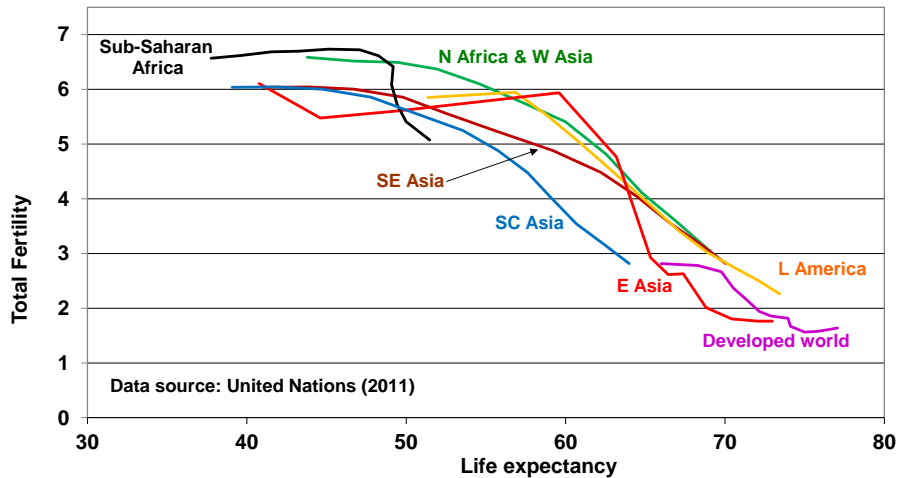
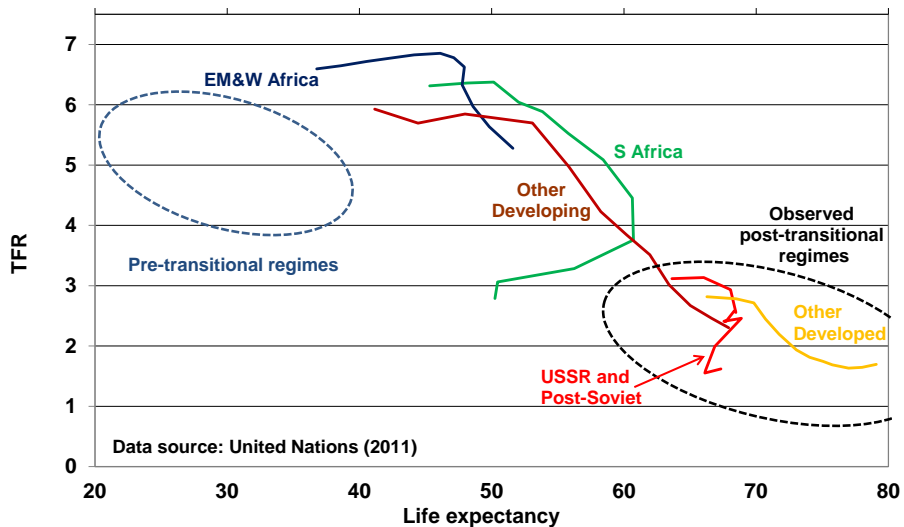


Figure 1 also sheds an unexpected light on the transition in South-Central Asia (principally the Indian Subcontinent) that is often seen as a laggard in fertility transition compared with much of the rest of Asia. In fact, fertility has generally been lower in South-Central Asia than in the other developing regions at the same level of life expectancy, suggesting that the Subcontinent is actually an over-achiever given the slower reduction in mortality. The same can be said for Sub-Saharan Africa in the last decade. The curve for East Asia shows the least regular trends, reflecting events in China, where the transition clearly reflects the long-standing readiness of Chinese rulers to engage in engineering, both civil and social, on a vast scale. What is clear from Figure 1 is that even modest extrapolation of recent trends into the future would place the large majority of the world's population in the post-transitional category.

Figure 2, however, strikes a somewhat different note, presenting the same information for a different set of groupings. The experience of the Soviet and Post-Soviet states is distinguished from other developed countries because of their markedly different mortality trends, while Southern Africa (the region most affected by HIV/AIDS) is plotted separately from the rest of Sub-Saharan Africa (East, Middle and West Africa). All other developing regions are taken together. Figure 2 shows clearly that significant exceptions exist to both the general pattern of transition and the idea of a single post-transitional regime, with the mortality crises of Southern Africa and the

Post-Soviet states. Both exceptional regions have suffered unprecedented stalls, or even substantial worsening, in mortality, yet fertility decline has continued apace. This suggests that, while mortality reduction plays a fundamental role early in the demographic transition, once a certain threshold is passed fertility decline has its own momentum and continues to low levels. A further note of caution is also in order: the relationship between life expectancy and total fertility could be the result of both being determined by a third, external factor. Indeed, given that countries with effective healthcare systems also tend to have effective family planning services, it is possible to argue that organisational competence or social capability lies at the root of both elements in the transition.

Figure 2: Paths of total fertility versus life expectancy, 1950-55 to 2005-10 with pre- and post-transitional regime spaces



In addition to the trend lines, Figure 2 also includes two ellipses that aim to give an approximate position for pre- and post-transitional regimes based on the evidence from historical and contemporary populations. The justification of these regime spaces will be argued in sections 4 and 5 below. But first, given that the concept is not widely employed in the study of contemporary populations, I address the question of what exactly a demographic regime is.

3. Demographic regimes

The concept of a demographic regime was introduced by Landry (1934) but has never gained the prominence of the demographic transition; moreover it is often used rather loosely. However, the definition from the Dictionary of Demography (Pressat 1985: 196) seems a good point of departure: “The particular combination of interrelated demographic characteristics that pertains in a given population. For example, a situation in which fertility and mortality are in balance and where social arrangements maintain this balance is sometimes referred to as a *homeostatic regime*”. Following up on the cross-reference in the last sentence leads to the following definition of a homeostatic regime: “A term used to denote the existence of a system of relationships between the fertility, mortality and nuptiality characteristics of a community and its socio-economic circumstances so that any movement away from an initial position of equilibrium tends to provoke changes elsewhere in the system which restore the original state.” (Pressat 1985: 97). Although these definitions curiously fail to include migration, they otherwise bring us to the heart of the matter: demographic processes and their socio-economic and cultural determinants. Most pertinently, they refer to “interrelated demographic characteristics” and “a system of relationships”. In short, a demographic regime is not just a list of parameters, but a dynamic system of control. This view of population processes can be traced back to *Malthus’ Essay on Population* (Malthus 1798), and his distinction between the preventive and positive checks as the basis of restraining population growth can be seen as the first attempt to characterise demographic regimes. Marx’s views on population are first cousins to demographic regimes, as the characteristics of each population are seen as being determined by the prevailing economic system: “... every special historic mode of production has its own special law of population, historically valid within its limits alone” (Marx 1887, volume i: 251).

Viewing demographic processes as part of a system of relationships does not always come easily to demographers, who mostly study processes in isolation rather than in combination. Probably few would disagree with the statement of Henry (1976: 3) that, “to analyse ... is to decompose”. Nevertheless, there can be considerable value in taking a more holistic approach. To date, historical demography has been the branch of the discipline in which “systems thinking” of this kind has made most progress and it is to the results of research on pre-transitional regimes that I now turn.

4. Pre-transitional demographic regimes

The evidence on the demographic character of pre-transitional societies is limited; data are fragmentary and subject to a variety of potential problems. However, enough is now known to form the basis of reasonably solid generalisation for a few parts of the world; Western Europe and East Asia are the best documented, with some important further contributions on India from the mid-19th century to the mid-20th. What do these historical studies tell us of the prevailing demographic regimes?

The long-run rate of population growth in all the well-documented, settled societies was low, often close to zero; rapid growth was limited to frontier populations. This observation is perhaps the single most important finding of all historical demography (Wilson 2001). There were often substantial fluctuations; short-run (year-to-year) fluctuations were especially affected by epidemic mortality, while medium term swings (decade-to-decade, even century-to-century) in growth rates reflected such factors as climate change and political stability (Chu and Lee 1994; Galloway 1986). The long-run growth rates did not diverge far from zero, but the shorter-term volatility means that we can only really speak of there being “quasi-equilibria”.

The implications of long-term growth close to zero are not always appreciated, in particular the fact that zero growth implies that net fertility (the number of surviving children per woman) must also have been low – close to two surviving children. Moreover, the number of children ever born was also not especially high, with estimates of total fertility mostly in the range of four to six (Wilson 2001). Thus, in all documented cases fertility was far below any theoretical maximum and must have been subject to powerful forces reducing it. Life expectancy fell mostly in the range of 20 to 40, with many populations in a tighter span of 25-35 (Wilson 2001).

It is also clear from the historical evidence that migration played an important role; urban areas were unhealthy and until the early 18th century at the earliest must have experienced negative natural increase; only sustained in-migration from healthier rural areas allowed cities to persist, let alone to grow. For example, Wrigley (1988) estimated that during the late 17th and early 18th centuries, London probably absorbed the whole natural increase of the remainder of England. Similar systems have been documented for other European countries and China (Skinner 1978; Van de Woude, De Vries and Hayami 1990).

When discussing these historical demographic regimes it is essential also to consider the socio-economic and cultural contexts in which they operated because these differed radically. Mortality, fertility or migration might have fallen within similar ranges in the different pre-transitional societies, but the institutional context that underpinned the demography often differed substantially. For example, in Western Europe marriage patterns took on a distinctive form, with relatively high age at

marriage for both sexes and significant numbers of both men and woman never marrying and thus never having children. However, once married, women in Europe had relatively high fertility compared with some other pre-transitional populations. In contrast with Europe, in East Asia marriage was universal for women but marital fertility was low by European standards, and infanticide was more evident as a means to keep population growth down. The configuration of sibling sets, in particular the presence or absence of a son, clearly also played a more prominent role in East Asian fertility decisions than in Europe (Lee and Wang 2001).

Coming to any comparative judgement on the nature of pre-transitional regimes in Asia and Europe has long been complicated by differences in the data sources as well as in the institutional contexts. However, in recent years the scholars engaged in the Eurasia project have provided pioneering insights into how these systems operated thanks to the application of a rigorously comparative analysis (Bengtsson, Campbell, and Lee 2004; Tsuya et al. 2010). What is clear from these studies is that individuals and families in pre-transitional societies were able to alter their demographic behaviour to cope with unexpected and negative events, notably food shortages. To be sure, they did not have the control over mortality or fertility that modern societies enjoy, but it is certainly wrong to see people in the pre-transitional past as passive followers of fixed cultural or social norms. It is also clear that all the documented pre-transitional populations had in place institutional arrangements, the effect of which was to limit population growth, and any assessment of the specifics of a demographic regime needs to take these institutional contexts into account.

Given that long-run population growth was close to zero in the pre-transitional era, it is tempting to assume that homeostatic forces, perhaps those of a clearly Malthusian nature, applied. However, the most careful analysis of pre-transitional population dynamics suggests that homeostasis, *stricto sensu*, was not the predominant force at work. Using historical data from Europe and China, Lee (1987) found evidence of homeostasis, but to such a weak extent that its effect was swamped over the short- and medium-terms by a multitude of other factors. Thus homeostatic forces operated through such complex and indirect pathways that their effects are difficult to detect. Just as we can only accurately speak of quasi-equilibria in pre-transitional populations, so the force shaping them can at best be thought of as “quasi-homeostasis”.

5. Post-transitional demographic regimes

Given that low fertility was, until recently, restricted to affluent countries (or to those, such as China, which it can be presumed will soon be rich), the literature on post-transitional demography is dominated by discussion of these parts of the world (Frejka et al. 2008). As with the transition, any attempt at generalisation on these post-transition patterns is complicated by the sheer abundance of relevant research, especially on Europe. Nevertheless, a few key points do stand out. As McNicoll (2012: 3) puts it, “The demographic regimes of modern affluent societies are characterized by long life, below-replacement fertility (sometimes, well below replacement), large and increasing proportions of elderly, and appreciable immigration from poorer areas”. Leaving aside the matter of ageing, I will comment in turn on the three elements he identifies: long lives, low fertility, and immigration.

With the exception of the Soviet Union and its successor states, all post-transitional societies have long and steadily rising life expectancy. In recognition of this feature, the post-transitional ellipse in Figure 2 is open-ended to the right. This progressive extension of longevity has a decisive impact on ageing, but is of little or no relevance to inter-generational replacement and hence to population dynamics; in most parts of the rich world mortality before the end of the reproductive years is now negligible. Therefore, I propose to leave it aside in this reflection; to a first approximation, what matters most in post-transitional regimes is to understand the interplay of fertility and migration.

In recent decades fertility has been below the replacement rate throughout Europe and developed Asia. There has also been a marked tendency to assume that fertility in these populations will remain low. However, the collective memory of demographers is short – and the experience of the 1950s and 1960s (the Baby Boom years) is generally neglected. At that time fertility was well above replacement in almost all developed countries, yet this too was a post-transitional phenomenon, as fertility had fallen close to or below replacement in European countries in the 1930s. Indeed, in the 1930s contemporary observers were united in assuming that fertility would continue indefinitely below the replacement level and thus guarantee population decline (Van Bavel 2010, McNicoll 2012). The general tone and some of the specific arguments that pervaded commentary on fertility in the 1930s are often strikingly familiar to opinions expressed since the 1980s in Europe. The 1950s and early-1960s formed a break with the pattern of relentless decline, but there are still many aspects of the Baby Boom that remain unclear (Van Bavel and Reher 2013). Most authors seem to accept that any future Baby Boom is implausible, but the grounds for precluding it are debatable. Thus, in Figure 2 the range of post-transitional fertility indicated is large, roughly from one to three. At such levels, parity becomes a key aspect of fertility. For fertility to go much

below replacement there must be either a large fraction of women who remain childless or a significant number who stop at one child, or both. Therefore, considering fertility in parity-specific terms is likely to be an important dimension of any analysis of post-transitional fertility wherever it emerges.

Experience in the rich world also throws light on how low fertility can go. Demographers have been surprised over and over again since the end of the Baby Boom by the extent of fertility declines, often in countries where fertility had recently been relatively high. No one anticipated the rapid fall of fertility in Southern Europe from the mid-1970s or the collapse of fertility in the ex-Communist countries after 1990. Demographers had to expand their lexicon, inventing terms such as lowest-low fertility (TFR below 1.3) to describe the new situations. Developed Asia has pushed the lower bound still further in recent decades, with total fertility below one. The long-term implications for population size and age structure of such ultra-low fertility are so challenging that few scholars (and even fewer governments) have been keen to address them. But there is no reason to expect that they are purely transient features of the demographic landscape. The one-child family may be emerging as a norm in Urban Asia (total fertility is now 1.2 in Calcutta, India, for example). If the transition is hypothesised as a change from quantity to quality in children, then the logical endpoint is one child, not two.

When considering post-transitional demography in the rich world a natural point of reference is research on welfare regimes (Esping-Andersen 1990, 1999), and demographers have seen the impact of such regimes on several aspects of fertility and family life (Aasve, Mazzuco, and Mencarini 2005). An important consideration in this regard is whether or not economic and human development inevitably leads to ever lower fertility. This is a widely held view, but the evidence presented by Myrskylä, Kohler, and Billari (2009) offers an alternative perspective. As they point out, the highest fertility among developed countries is found among those with the highest levels of human development, and the overall relationship between the Human Development Index and fertility is one of a reversed J-shape or a hockey stick. If so, then the expectation for post-transitional fertility in the developing world may be very low, only rising again as high levels of development are reached. The question of gender equity may play an especially large role in this regard. In a similar vein to the arguments of Myrskylä, Kohler, and Billari (2009), McDonald (2000, 2013) has noted that the developed countries in which gender equity has progressed furthest are also those with the highest fertility. Given that gender equity is mostly less apparent in the developing world than in the more advanced parts of Europe and North America, there seem to be strong *prima facie* reasons to expect fertility to fall to very low levels during the immediate post-transitional era in many countries.

Migration has also been a significant element in many post-transitional regimes; fertility in most of Western Europe has been below replacement (often far below) for decades, yet population decline is rare because immigration has more than made up for the shortfall in births (Wilson et al. 2013). As Billari and Dalla Zuanna (2011) point out, this can be seen as a continuation of the pre-transitional migration patterns that enabled cities to persist in spite of their below-replacement fertility. The difference is principally one of geographical scale; rather than drawing on nearby rural hinterlands, rich countries today draw their migrants from a global labour pool. This is a strategy that can work for small- to medium-sized rich countries, but where could China find enough migrants to compensate for fertility far below replacement on a long-term basis? The only answer is in Sub-Saharan Africa. At present the female gross reproduction rate in China is around 0.6. If this is sustained, then China would need several million migrants a year for the indefinite future.

To sum up this discussion of post-transitional regimes in the rich world, we can broadly classify countries into four general regimes. How stable these four patterns will be in the future is unclear, but so far they have run for two to three decades.

Regime 1 – North-West Europe, North America and Australasia

Fertility is relatively high, only a little below replacement (or even above in some years in the United States); there is high immigration.

Regime 2 – Southern Europe and the German-speaking countries

Fertility is low (TFR is below 1.5); there is high immigration.

Regime 3 – Developed East Asia (Hong Kong, Japan, South Korea, Singapore, Taiwan, Urban China)

Fertility is very low (TFR is close or even below 1.0); there is little immigration.

Regime 4 – Eastern Europe

Fertility is low and there is high emigration.

The differing implications for population dynamics of these four situations are obvious from even a cursory consideration. Regime 1 implies steady or even quite rapid population growth, whereas regimes 3 and 4 lead to more or less rapid decline. Which,

if any, of these four models might be adopted by the newly post-transitional parts of the developing world is unclear. But we can say that the possibility exists for radically differing population growth rates over the medium term.

6. Conclusions – towards a research agenda

To conclude I offer a series of suggestions for how we might advance research into post-transitional demographic regimes.

1. Our understanding of post-transitional regimes can be enhanced by further research into the low-growth regimes of the past.
2. We need to recognise that low fertility is rapidly becoming a global phenomenon and thus our explanations for it need to work in all societies.
3. We need to understand in detail the institutional context within which fertility occurs.
4. Parity-specific analysis may be essential to understand the relationships between institutions, policies, and behaviour.
5. Given that fertility and migration are often inter-related we need to assess their combined impact on population dynamics through measures of replacement that take both processes into account.

7. Acknowledgements

I wish to acknowledge helpful comments on presentations of the ideas contained in this paper by Tim Dyson and participants at seminars in Oxford and St Andrews, especially Francesco Billari and Allan Findlay. The comments of three anonymous referees also helped to improve the paper. Many of the ideas expressed in this paper were first developed during a stay at the International Research Center for Japanese Studies (Nichibunken) in Kyoto; I am very grateful to Nichibunken for the chance to spend time there.

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